

Superfund Records Center  
Site: Troy Mills  
Parcel: 2.2  
Cluster: 237388



SDMS DocID 237388

## **PRELIMINARY CLOSE OUT REPORT**

Troy Mills Landfill Superfund Site  
Troy, New Hampshire

September 2005

## **I. INTRODUCTION**

This Preliminary Close Out Report (PCOR) documents the completion of all physical, remedial construction activities, which were completed by the U.S. Environmental Protection Agency Region I (EPA), at the Troy Mills Landfill Superfund Site (the "Site"). The PCOR was prepared in accordance with *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P). EPA and the State of New Hampshire conducted a pre-final inspection on August 18, 2005, and no outstanding construction items were identified. Therefore, no additional, substantial construction is anticipated at the Site.

## **II. SUMMARY OF SITE CONDITIONS**

### **Background**

The Troy Mills Landfill Superfund Site (the Site) is a two-acre former drum disposal area located approximately 1.5 miles south of the center of Troy. The two-acre Site is located in the southeastern corner of a larger 270-acre parcel (the property) off Rockwood Pond Road in Troy, Cheshire County, New Hampshire. The Site is surrounded primarily by undeveloped woodlands, a gravel access road to the west, and a former railroad bed currently used as a recreational trail to the east. Rockwood Brook flows south to north a short distance to the west of the Site and continues downstream to Sand Dam Pond, where the Town of Troy's recreational swimming area is located. The nearest residences are approximately ½ mile from the Site. Figure 1-1 taken from the Remedial Investigation Report shows the Site and surrounding areas.

The Site was used by Troy Mills, Inc. to dispose of drums of hazardous substances that were generated at its manufacturing facility in the center of town. The manufacturing facility and the 270-acre parcel were owned by Troy Mills, Inc. Immediately to the north of the Site is a separate eight-acre solid waste landfill, regulated by the New Hampshire Department of Environmental Services (NHDES), which was used for the disposal of waste fabric scraps and other miscellaneous solid waste from the former mill. The manufacturing facility and the solid waste landfill are not considered part of the Site.

In September 2003, the Site was listed on the National Priorities List (NPL).

### **Removal Action Activities**

In September 2003, a time-critical removal action was initiated under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 USC § 9601 *et seq.*, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). The first phase of the removal action included the installation of three light non-aqueous phase liquid (LNAPL) interceptor trenches to capture free product floating on the groundwater. The trenches consist of slotted rectangular concrete structures (4 feet high by 4 feet wide by 8 feet long) placed at the top of the water table. The downgradient sides of the trenches are covered with a geomembrane designed to limit the migration of LNAPL. The trenches capture LNAPL before it discharges along with

groundwater along the western edge of the former drum disposal area. The LNAPL is recovered periodically via vacuum extraction or absorbed on sorbent booms. Photograph No. 1 shows one of the trenches during installation.

The second phase of the removal action, which was initiated in July 2004, involved the excavation of 7,692 buried drums, the removal of 29,924 gallons of flammable liquid waste and 3,099 cubic yards of sludge, and the excavation of 26,244 tons of heavily contaminated soil which were transported off-site for disposal at permitted facilities. Less contaminated residual soil, which met contaminant field screening levels developed by EPA in consultation with NHDES, were segregated from the soil and other materials to be disposed of off-site and backfilled into the excavation. Post-excavation sampling and laboratory analyses conducted by EPA identified no residual soil with contaminant concentrations above NHDES soil screening criteria and confirmed that all soil with the potential to leach contaminants into groundwater had been effectively removed from the Site. Photograph No. 2 shows excavation activities conducted at the Site.

In Summer 2005, EPA completed its removal action with the construction of a two-foot thick permeable soil cap over the excavation area to prevent direct contact risks to underlying residual contaminated soil. The permeable soil cap is constructed of a geotextile placed over the residual soil, a minimum of 18 inches of sand from a nearby sand quarry, and 6 inches of topsoil which was hydroseeded to establish a vegetative cover that protects the surface of the cap from erosion. In addition, several drainage structures were constructed (riprap drainage swales) to limit cap erosion due to surface runoff. Photographs Nos. 3 and 4 show the backfilled former drum disposal area being hydroseeded and the current appearance of the permeable soil cap, respectively.

### **Basis for Further Response Action**

In 2005, EPA completed a Remedial Investigation (RI) at the Site. As part of the RI, EPA collected and analyzed surface water, sediment, and wetland soil samples from nearby Rockwood Brook and the surrounding wetland, referred to as the Rockwood Brook Wetland Study Area. EPA also evaluated current and historical groundwater data, collected and analyzed air and soil samples from locations throughout the Site, and evaluated analytical data collected over the course of the drum removal action.

The baseline human health risk assessment completed as part of the RI revealed that future recreational users and near-Site residents potentially exposed to chemicals of concern (COCs) in groundwater, LNAPL-contaminated leachate, and wetland soil via ingestion or direct contact may present an unacceptable human health risk (e.g., cancer risk exceeding  $1\text{E-}04$  and noncancer hazard index exceeding 1.0). As a result, actual or threatened releases of hazardous substances from this Site, if not addressed, may present an imminent and substantial endangerment to public health or welfare. The baseline ecological risk assessment completed as part of the RI concluded that there is negligible ecological risk to organisms within Rockwood Brook surface water, sediment, and wetlands at the Troy Mills Landfill Site.

## **Selected Remedy**

On September 30, 2005, a Record of Decision (ROD) was issued for the Troy Mills Landfill Superfund Site. The selected remedy specified in the ROD includes both source control and management of migration components to obtain a comprehensive remedy. The selected remedy incorporates components of the time-critical removal action completed by EPA in Summer 2005, and additional remedial activities to address unacceptable levels of risk posed by Site contaminants. EPA has determined, however, that no additional substantial construction activities are required at the Site to address these unacceptable risks.

The source control remedial components of the selected remedy include:

- Removing all potential floating free product, LNAPL, before it can reach the nearby wetlands in a series of existing LNAPL interceptor trenches constructed by EPA in 2003 until LNAPL levels dissipate; and
- Maintaining the two-foot thick permeable soil cap constructed by EPA in 2005 to prevent potential contact with residual contaminated soil in the former drum disposal area. The permeable cap also allows precipitation to infiltrate through the cap and facilitate the cleanup of groundwater.

The management of migration remedial component of the selected remedy includes:

- Monitored natural attenuation of contaminated groundwater until groundwater cleanup levels are met.

Additional remedial components of the selected remedy include:

- Establishing institutional controls that restrict the use of contaminated groundwater for drinking water purposes until groundwater cleanup levels are achieved, restrict activities that would disturb the cap, prevent the disturbance of remedy components until they are no longer needed, and require notification of any changes in the use of the land;
- Implementing a comprehensive monitoring and sampling program to evaluate groundwater, surface water, leachate, sediment, and wetlands to ensure that natural attenuation processes are continuing as expected; and
- Since hazardous substances will remain at the Site, review of the remedy at least once every five years after the initiation of remedial action at the Site, as required by law.

In the future, when groundwater and leachate cleanup levels are achieved, and in support of NPL site deletion, a soil boring sampling and analysis program will be conducted to evaluate whether or not the backfilled soil under the permeable soil cap poses a risk to human health and the environment. If the soil is found to pose a risk, even after groundwater cleanup levels have

been achieved, continued groundwater monitoring may be required under the capping ARARs identified for the remedy.

The institutional controls proposed for the Site will be implemented by the property owner and will include the establishment of a New Hampshire groundwater management zone (GMZ) to prevent the use of Site groundwater as potable water. Attached Figure 2-1 taken from the Feasibility Study Report depicts the proposed GMZ.

The ROD also specifies interim groundwater cleanup levels and leachate cleanup levels, which are provided as an attachment to the PCOR.

The remedial action selected for implementation at the Troy Mills Landfill Site is consistent with CERCLA and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300 *et seq.*, as amended. The selected remedy is protective of human health and the environment, will comply with all applicable or relevant and appropriate requirements (ARARs), and is cost effective. The selected remedy will reduce potential human health risk levels such that they do not present an unacceptable incremental carcinogenic risk and such that the non-carcinogenic hazard is below a level of concern. No ecological risks were identified at the Site.

### **Redevelopment Potential**

The Troy Mills Landfill Site is undeveloped and is surrounded primarily by undeveloped woodlands. Currently the property is owned by Troy Mills, Inc. and is controlled by the Troy Mills bankruptcy trustee while the company is undergoing bankruptcy proceeding. The Town has expressed a potential interest in acquiring the property for passive recreation that might include creating trails that would link up with nearby existing recreational trails. EPA and NHDES have held meetings with town officials to discuss environmental issues pertaining to both the Troy Mills Landfill Site and the adjacent solid waste landfill should they acquire and reuse the property.

As a practical matter, residential and other uses that require the construction of buildings and other significant structures within the two-acre Troy Mills Landfill Site would be limited due to the institutional controls that will be placed on the Site to protect the remedy. For the adjacent solid waste landfill, state regulations would affect the cost and viability of future reuse options within that area. Other than the need to protect landfill covers, monitoring wells and other cleanup-related structures from vandalism or incidental damage, passive recreation could be compatible with the Site and consistent with surrounding land uses.

### **III DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL**

The selected remedy for the Troy Mills Landfill Site is a Limited Action ROD and no remedial design phase is planned. EPA will initiate remedial action upon signature of the ROD. As no remedial design phase or actual physical construction activities are planned for this Site, no

construction quality assurance/quality control (QA/QC) plan will be prepared for the remedial action.

During the time-critical removal action, no construction QA/QC plan was prepared; however, standard construction practices and established health and safety procedures were followed.

#### **IV ACTIVITIES SCHEDULED FOR SITE COMPLETION**

Activities scheduled for the Site include the continued maintenance of the LNAPL interceptor trenches and permeable soil cap, implementation of an environmental monitoring program (including installation of four additional monitoring wells), and the establishment of institutional controls. It is estimated that LNAPL will dissipate within 5 years and that interim groundwater cleanup levels will be attained throughout the entire Site in approximately 30 years.

It is estimated that all remedial activities will be completed according to the schedule below:

##### **Schedule for Site Completion**

| <b>Task</b>   | <b>Estimated Date</b> | <b>Responsible Organization</b> |
|---|-----------------------|---------------------------------|
| Remedial Action Start <sup>1</sup>                        | September 2005        | EPA                             |
| Interim Remedial Action Report                            | September 2007        | EPA                             |
| Operational and Functional Determination                  | September 2007        | EPA/NHDES                       |
| Long-Term Remedial Action Start                           | September 2007        | EPA                             |
| First Statutory Five-Year Review                          | September 2010        | EPA                             |
| Long-Term Remedial Action Completion                      | September 2017        | EPA                             |
| Operations and Maintenance Start                          | September 2017        | NHDES                           |
| Operations and Maintenance Completion                     | September 2035        | NHDES                           |
| Final Site Inspection <sup>2</sup>                        | September 2035        | EPA                             |
| Final Close Out/Final Remedial Action Report <sup>2</sup> | September 2035        | EPA                             |
| NPL Site Deletion   | September 2035        | EPA                             |

<sup>1</sup>The initiation of remedial action begins upon signature of the ROD.

<sup>2</sup>The Final Site Inspection and Final Close Out/Final Remedial Action Report are contingent on the Site being eligible for NPL site deletion. At such time when groundwater cleanup levels have been achieved (an estimated 30 years), the soil under the permeable soil cap will be evaluated to determine if it poses a risk to human health and the environment. If the soil is found to pose a risk, continued monitoring will be required.

All preliminary completion requirements for the Site have been met as specified in OSWER Directive 0320.2-C. Specifically, a pre-final inspection was conducted by EPA and the State of New Hampshire which verifies that construction activities scheduled and planned as part of the time-critical removal action have been completed. Components of the removal action that have been incorporated into the ROD (i.e., the LNAPL interceptor trenches and the permeable soil cap) were inspected, and no further construction activities are required for these components.

#### **V. SUMMARY OF REMEDIATION COSTS**

The extramural costs of the time-critical removal action are approximately \$7.8 million.

The costs of the selected remedy are summarized below:

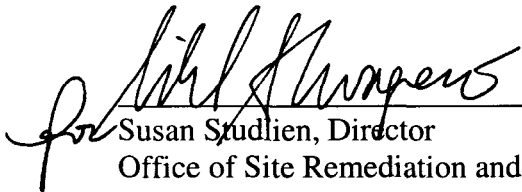
### Estimated Remedial Action Costs for Troy Mills Landfill Superfund Site

| Cost Item                           | Cost               | Comments  |
|-------------------------------------|--------------------|---|
| Capital Cost                        | \$59,961           | Implementation of institutional controls and installation of four new monitoring wells                                  |
| Net Present Worth of O&M Costs      | \$2,883,860        | Environmental monitoring for 30 years, maintenance of permeable soil cap, and maintenance of LNAPL interceptor trenches |
| Net Present Worth of Periodic Costs | \$61,273           | 5-year reviews  |
| <b>Total Net Present Worth Cost</b> | <b>\$3,005,094</b> |   |

O&M = Operations and Maintenance.

#### VI. FIVE-YEAR REVIEW

Hazardous substances will remain at the Site above levels that allow unlimited use and unrestricted exposure after the completion of the action. Pursuant to CERCLA §121(c) and as provided in the current guidance on Five-Year Reviews (OSWER Directive 9355.7-03B-P, June 2001), EPA must conduct a statutory five-year review. The initial Five-Year Review Report will be completed in September 2010.

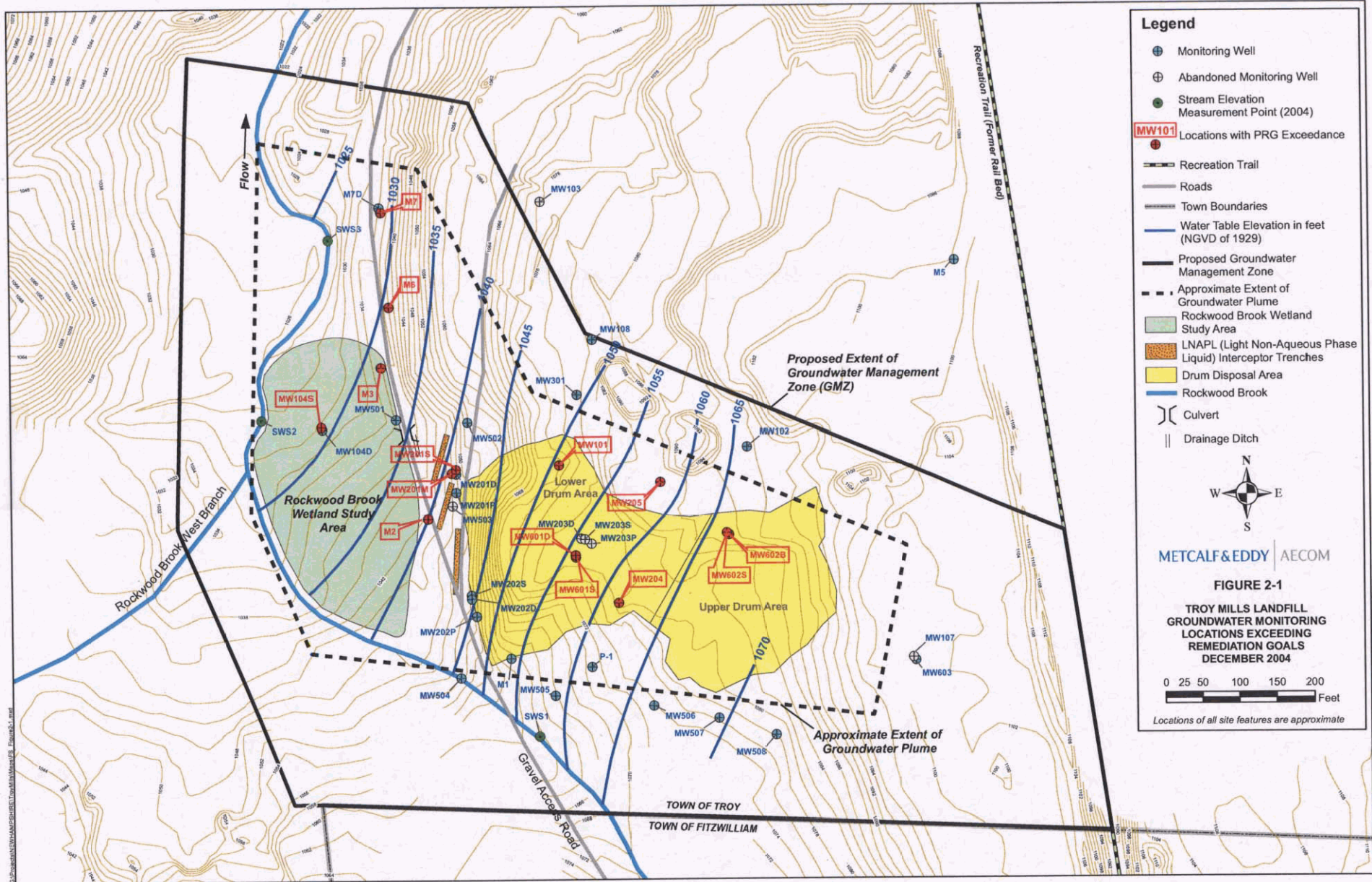
  
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Susan Studien, Director  
Office of Site Remediation and Restoration

9-30-05  
Date











Photograph No. 1 of the LNAPL Interceptor Trenches During Installation.



Photograph No. 2 of the Excavation Activities During the Time-Critical Removal Action.





Photograph No. 3 of the Backfilled and Covered Former Drum Disposal Area During Hydroseeding Activities.



Photograph No. 4 of the Former Drum Disposal Area with a Vegetated Cap.

